

Subject- Science

Activity 6- To Identify the role of meristematic tissues in plants

Chapter 6:Tissues

Class-IX

Duration- 8 days

Nature of the Activity- Group

Learning Outcome- The students will be able to explore the role of meristematic tissues in plants

What we have to do?

To study the tissues responsible for growth in plants

What do we require?

Two wide mouthed glass jars, two onion bulbs, inch tape, razor

What do we need to know?

Meristematic tissue has the ability to divide and re divide to provide growth to plants. Generally, growth of plants occurs from specific regions like root and shoot, nodes, girth of stem, leaf base, etc. Therefore, meristematic tissue is present in these regions.

How will you proceed?

> Teacher's Activity

Teacher will arrange kits containing the materials required for the activity. Teacher will give instructions regarding the activity.

> Student's Activity

1. Take 2 wide mouthed glass jars and fill them with tap water.
2. Place the 2 onion bulbs at the mouth of each jar in such a way that stem and root parts of each bulb remain in contact with water.
3. Allow the roots to emerge out and grow in water.
4. Observe the growth of roots in both the onion bulbs for 3 days.
5. Measure and record the growth of roots on day 1,2 and 3 on your worksheet.
6. On 4th day, cut the root tips in jar B by about 1 cm. Again place the onion of jar B with roots hanging in water.
7. Observe the growth of roots in both the jars for 5 more days and record your observations.

What do we observe?

Observe the growth of roots in both the jars for five more days and record your observations.
Record the following observations:

Length of roots	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8
Jar A								
Jar B								

What have you learnt?

1. Which of the two onions has longer roots? Why?
2. Do the roots continue growing even after we have removed their tips?

What would I like to know ?

1. The cells of the meristematic tissue have the quality of self-renewal. Every time the cell divides, one cell remains identical to the parent cell and the others form specialized structures.
2. They lack vacuoles.
3. They are living and thin-walled.
4. The protoplasm of the cells is very dense.
5. The meristematic cells heal the wounds of an injured plant.

Extended Learning

1. Why meristematic tissues have large and conspicuous nuclei?
2. Why cells of meristematic tissues lack vacuoles?
3. Differentiate between meristematic and permanent tissue
4. What are the principles behind the use of meristematic cells as virus free ex-plants in micro propagation?
5. Construct a table relating 3 types of meristems with their location and function.